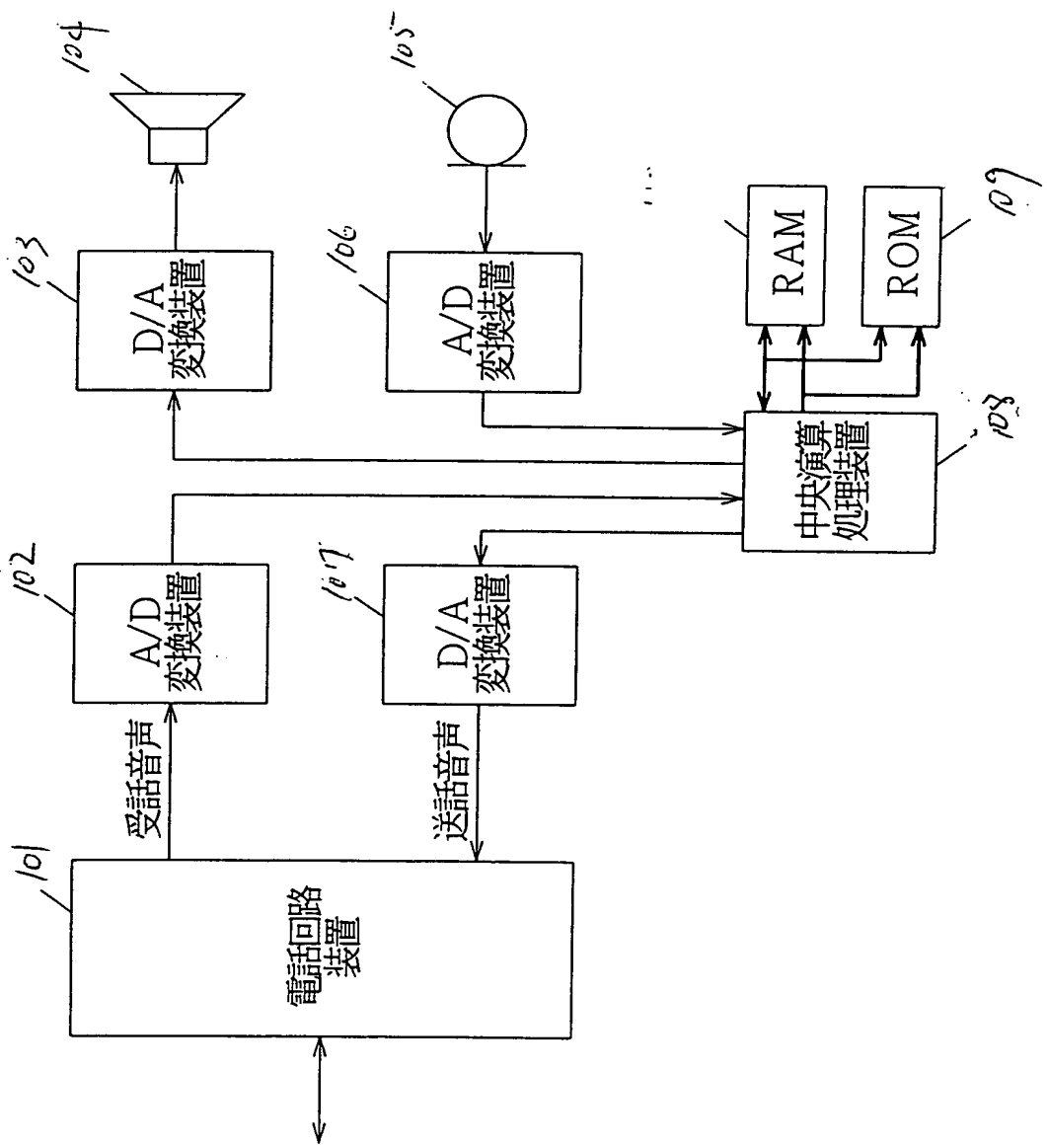
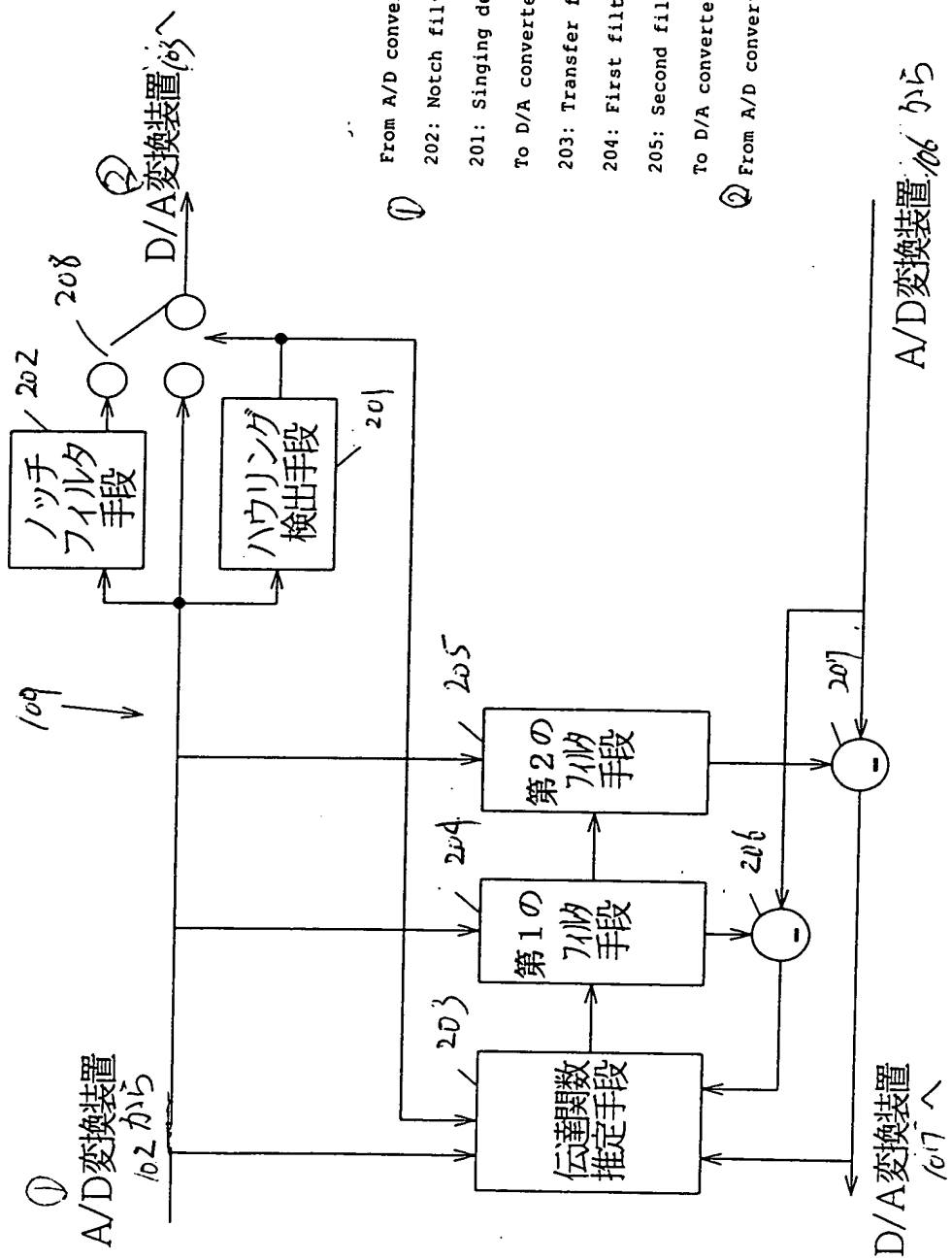


Fig. 1



- 101: Telephone circuit
- Received voice
- Transmitted voice
- 102: A/D converter
- 103: D/A converter
- 106: A/D converter
- 107: D/A converter
- 108: CPU

Fig. 2



- ① From A/D converter 102
 202: Notch filter means
 201: Singing detection means
 To D/A converter 103
 203: Transfer function estimation means
 204: First filter means
 205: Second filter means
 To D/A converter 107
 ② From A/D converter 106

Fig. 3

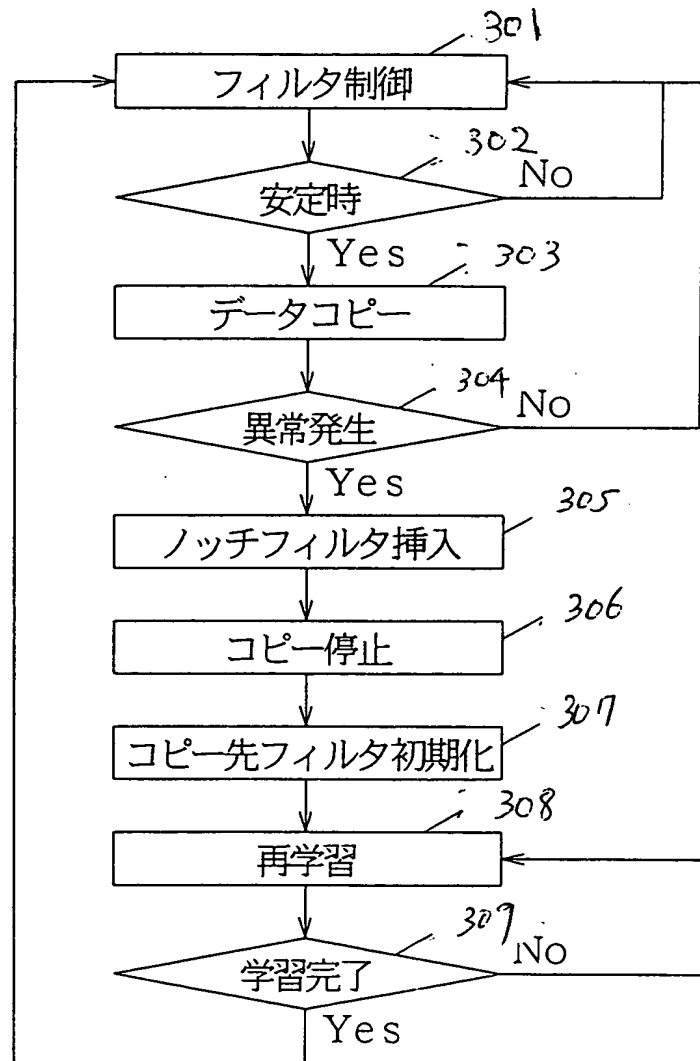


Fig. 3

301: Filter control

302: Stable

303: data copy

304: Abnormality occurs

305: Insert notch filter.

306: Stop copying.

307: Initialize copy-to filter.

308: Re-learning

309: Learning is complete.

Fig. 4

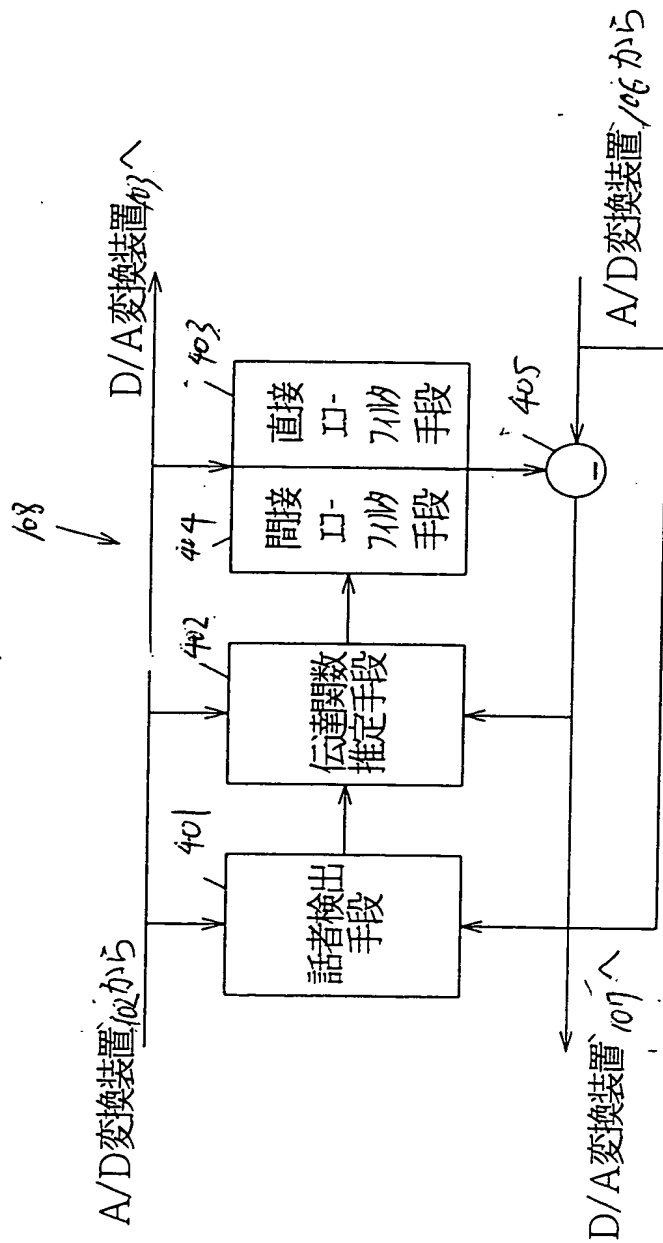


Fig. 4

From A/D converter 102

To D/A converter 103

401: Speaker detection means

402: Transfer function estimation means

403: Direct echo filter means

404: Indirect echo filter means

To D/A converter 107

From A/D converter 106

Fig. 5

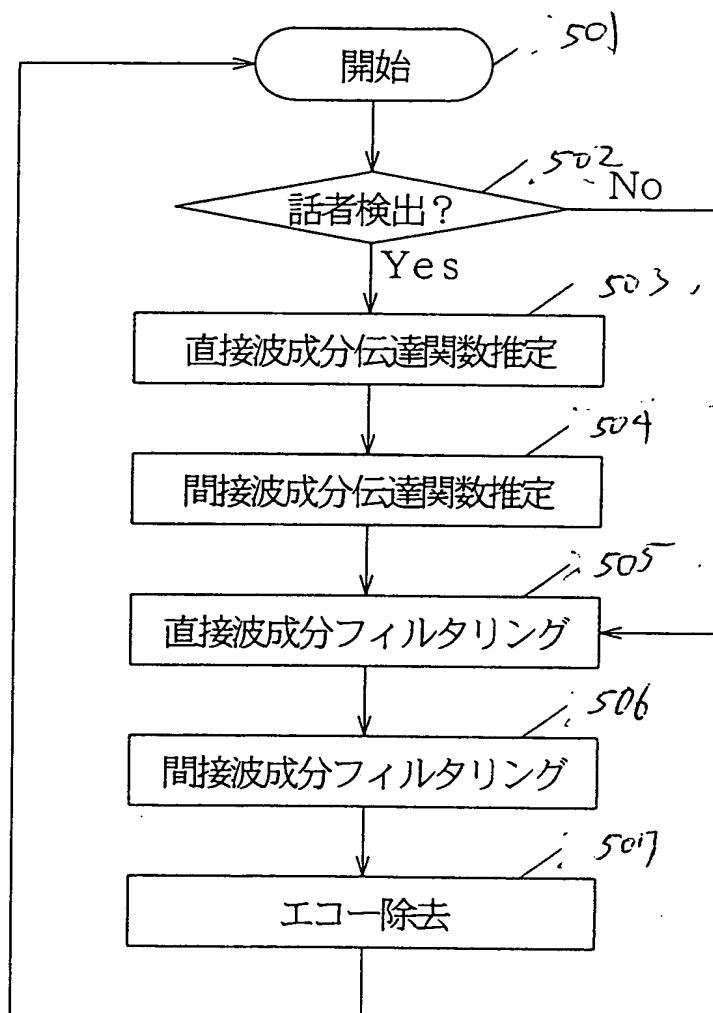


Fig. 5

501: Start

502: Speaker detected?

503: Estimate direct echo component transfer function.

504: Estimate indirect echo component transfer function.

505: Filtering of direct echo component

506: Filtering of indirect echo component

507: Echo cancellation

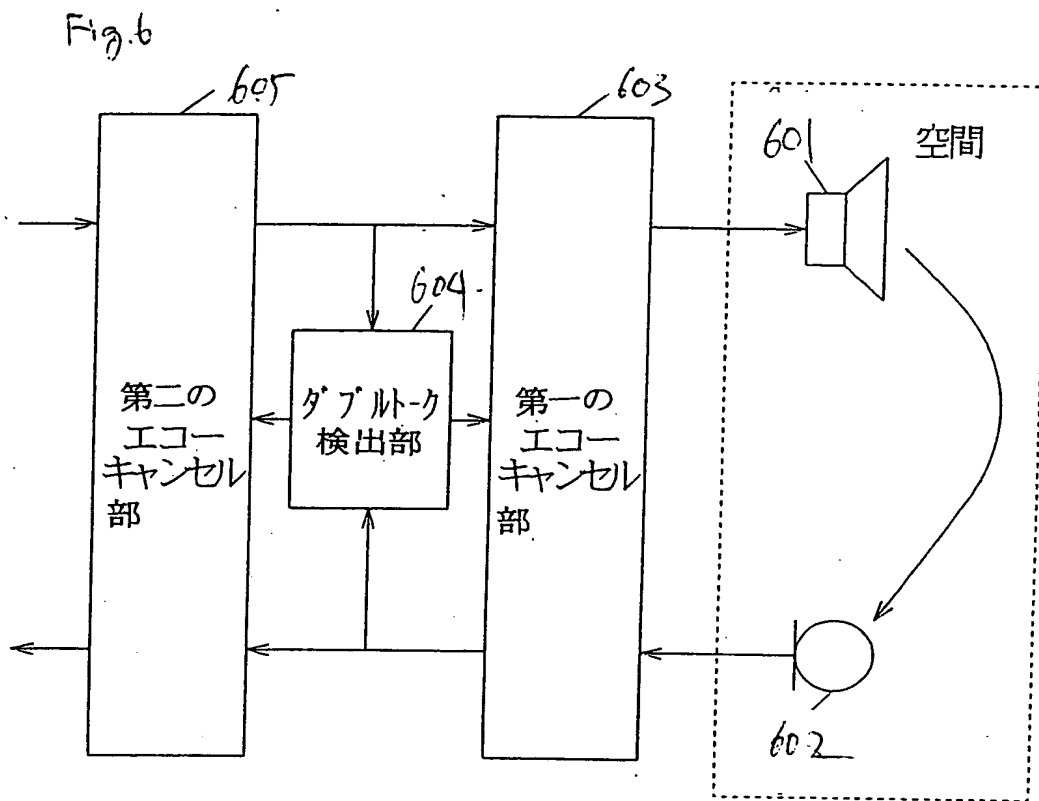


Fig. 6

605: Second echo canceller

604: Double talk detector

603: First echo canceller

acoustic echo path